American Society for Testing Materials BULLETIN

ISSUED BI MONTHLY

A Service

THE SOCIETY is being recognized to an ever increasing extent as an authority in questions relating to materials. Its standards are being specified by the purchasing departments of public utilities, by state and municipal departments, by large and small consumers alike. They are being written into construction and safety codes.

But the more widely the Society's work becomes known, the more frequently is it turned to for assistance and the greater are its responsibilities. It is asked to lend its committee organization in the study of new materials problems in industry. It is asked to carry out extensive investigations. It is appealed to for information on a hundred and one phases of the properties of materials.

In this the aims for which the Society was organized are being realized: to serve its members, to serve industry, to serve the state, to serve the public.

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September, 1927

ENGINEERS' CLUB BUILDING
1315 SPRUCE ST., PHILADELPHIA

OLSEN

Universal Testing Machine

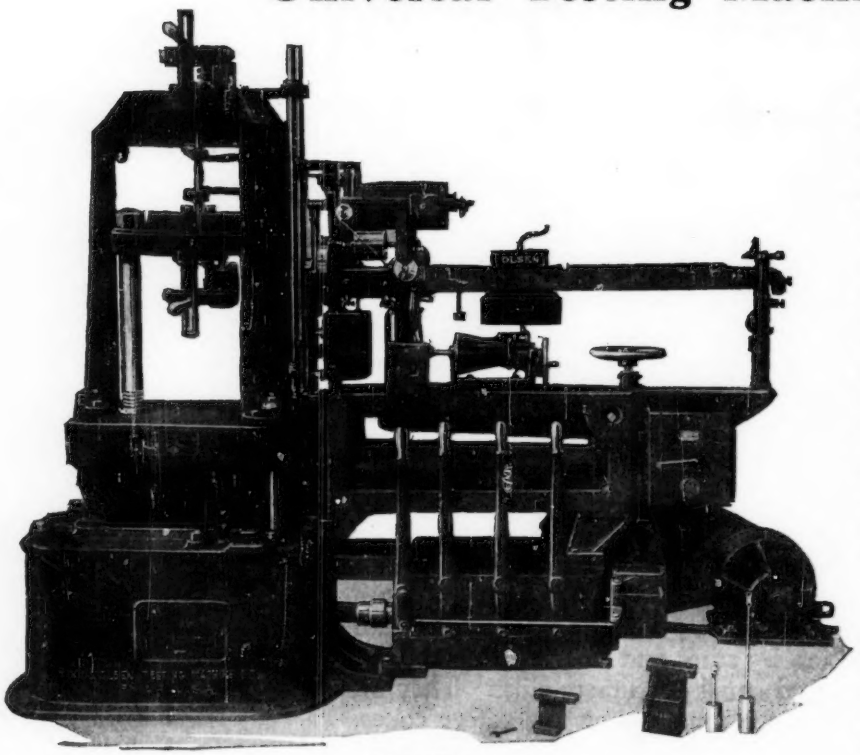

Plate 1086

This illustration represents the last word in testing machine construction. A completely Automatic and Autographic Universal Testing Machine for all tests, and of triple capacity. A machine provided with our latest Automotive Drive, having eight speeds and reverse, and with all fast speed gearing entirely enclosed, running in a bath of oil and ball bearing mounted. Also arranged for hand operation, and provided with automatic indicator showing operator speed of head at all times.

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Among the latest up-to-date testing equipment as manufactured and distributed by us are the following:

Herbert Pendulum Hardness Testers
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American Society for Testing Materials

BULLETIN

ENGINEERS' CLUB BUILDING 1315 SPRUCE STREET PHILADELPHIA, PENNA.

NUMBER 28 September 30, 1927

Over Five Hundred Standards

HOW MANY of our members, we wonder, appreciate the magnitude of A.S.T.M. standardization work—one of the two major functions of the Society? This work has been growing year by year as new fields have been entered and the activities of existing committees broadened. The past decade has seen much stimulation given to the development of technical and industrial standards; and a statistical comparison of the 515 standard and tentative specifications, methods of test and definitions of terms that are now current in the Society with the 164 in existence ten years ago is both interesting and instructive. The increase of over 200 per cent is itself significant of the Society's growth.

	1917	1927
Ferrous Metals	76	107
Non-Ferrous Metals	19	70
Cement and Concrete	3	16
Lime	3	13
Gypsum and Gypsum Products	1	13
Brick and Refractories	4	16
Pipe and Drain Tile	6	6
Hollow Tile	..	4
Preservative Coatings	10	47
Petroleum Products and Lubricants	1	30
Road Materials	15	72
Coal and Coke	4	10
Timber and Timber Preservatives	7	10
Waterproofing and Roofing Materials	4	28
Slate	..	4
Insulating Materials	1	12
Rubber Products	6	14
Textile Materials	3	20
Metallography	1	6
Miscellaneous	..	17
	164	515

A glance through this table shows marked increases in the number of standards, notably in the fields of non-ferrous metals, cement, lime and gypsum, preservative coatings, petroleum products, road materials, waterproofing materials and textiles. Even in the field of ferrous metals, the oldest in the Society and the one most fully developed ten years ago, there has been a steady expansion of standards. In the past ten years twelve new committees have been organized, the new fields including malleable castings, ferro-alloys, electrical-resistance materials, screen wire cloth, thermometers, slate, naval stores and natural building stones; and these committees have contributed substantially to the number of standards.

Despite this steady and in some cases phenomenal growth, there remain literally dozens of opportunities for useful

(*Continued on page 2*)

A.S.T.M Membership World Wide

An interesting development has taken place during the past few years and that is the way the membership of the Society is reaching out over the entire World. Membership is no longer confined to the United States, or the United States and Canada, but is growing year by year in a large number of foreign countries. Ten years ago the membership of the Society totalled 2193, of which 122 were in foreign countries, 76 of these being in Canada. Since then the total membership has doubled. The membership in foreign countries, however, has quadrupled and now numbers 462. From a total of 15 foreign countries represented in 1917 the number of foreign countries represented has increased to 38 in 1927. It is but natural that the English speaking nations should lead this foreign membership. The number in Canada alone is 153, whereas the total in all the nations of the British Commonwealth totals 280. The number (182) of members in countries speaking languages other than English, however, is astonishing. Most of these members are interested primarily in the Society's publications and translation seems to be no barrier in securing the latest information that an American Society may be publishing.

It is gratifying to know that the Society's work is being appreciated to such an extent abroad. We should encourage this interest on the part of our foreign members. At the same time the members in this country should not fall behind in bringing the value of the Society's work to the attention of individuals in this country who would benefit thereby and encouraging them to acquire membership. The increase in the past few years of membership held in foreign countries from five per cent to over ten per cent shows to what extent those even at a distance and not in a position to participate in all of the Society's activities, value its work. It would seem that there would be all the more reason for many in this country to affiliate with it.

The members in the United States should, of course, be the greatest exponents in increasing the Society membership and are looked to for ever greater activity in bringing in new members. The number of members joining this year is below that for last. There is still time to make up this deficiency. An application blank accompanies this BULLETIN and every member is asked to place it in the hands of an individual or company who he believes would benefit through membership and to urge them to take affirmative action. If desired, applications will be received now for memberships dated January 1, 1928.

Our Publications

The summer months are busy ones for the office staff in editing and publishing the several publications of the Society. The current Year Book, upon which work is started even before the annual meeting, is the first to be taken up. No sooner is the annual meeting past than work is immediately under way on the final editing of the standards and tentative standards, committee reports, papers and discussions that ultimately will go to the members in bound form. This summer we have faced perhaps the biggest publication schedule in the history of the Society, with the Year Book (400 pages), Parts I and II of the Book of Standards (1900 pages), Book of Tentative Standards (800 pages), Parts I and II of the Proceedings (1800 pages) and an index to the Proceedings, Volumes 21 to 25 (225 pages). These regular publications represent a total of 5125 pages and are run in editions of from two to six thousand copies. Press work on these and various reprints that are struck off requires that we must have presses running continuously, printing an average of 500 pages a week, for three months.

Special Reprints.—Ever increasing demands are being made on the Society's publication facilities, not only due to the increased membership and greater activity of the Society, which are reflected in larger publications, but there is an increase in the demand for separate reprints. Aside from the usual reprints of papers, an interesting and significant development is the increasing demand for separate reprints of committee reports or of collections of all standards falling under the jurisdiction of a given committee. This year, for instance, four such reprint pamphlets have been printed, comprising respectively the Report of Committee A-5 on Corrosion of Iron and Steel (72 pages), the Report of Committee D-2 on Petroleum Products and Lubricants, with all standard and tentative methods relating to petroleum products and lubricants (a pamphlet of 250 pages), the Report of Committee D-9 on Electrical Insulating Materials, complete with the standard and tentative methods of test prepared by that committee (130 pages) and a pamphlet containing the standard and tentative methods of test relating to textile materials (105 pages) printed for Committee D-13 on Textiles.

These pamphlets are purchased at special prices by members of the respective standing committees, by whom they are widely distributed in various ways, thus aiding considerably in promoting the usefulness of the Society's work. They are also placed on general sale and are meeting with considerable favor since they offer in convenient form and in one cover all the standards for a given material.

Over Five Hundred Standards

(*Continued from page 1*)

standardization of specifications and methods of test as is seen from the demands being made upon existing committees for expansion of their activities and upon the Society itself for entrance into new fields. The development of the trade association movement in the past decade has stimulated the call for standards; and one influence of this on the work of the Society is seen in the fact that 67 technical, industrial and trade associations hold membership in the Society, of which 55 are participating in our committee work. In addition to these, 53 associations not members of the Society are cooperating in its standardization work. In the light of this summary and comparison, the Society is planning for a continuing demand for promulgation of materials standards—a demand that it is better prepared than ever to meet.

A.S.T.M. Standards in Industry

All members of the Society are no doubt interested in the extent to which the A.S.T.M. standards are used in industry and the various ways in which they may be put to use. The large purchasers probably have studied the question of buying to specification more than others have had occasion to do. We believe that statements covering the use of A.S.T.M. specifications by such large purchasers will be of interest not merely as a recital of the use of individual specifications but as affording valuable suggestions to others of ways in which the work that has already been done by our committees could be capitalized and put to use. The following statement has been contributed by Mr. J. A. Capp, Chief of Testing Laboratory, General Electric Co., Schenectady, N. Y., and a Past-President of the Society:

"Large scale buyers of materials must have access to the widest possible markets on a competitive basis. We believe this can be accomplished more easily and safely by the use of standardized specifications than in any other way. Therefore, the General Electric Company uses the specifications of the American Society for Testing Materials whenever possible. In some cases where the nature and use of the material permit, purchases are made directly to A.S.T.M. specifications by title and designation. Occasionally direct reference to A.S.T.M. standards is made even on drawings. These uses of the A.S.T.M. specifications, however, are the exception rather than the rule because our interests are generally best served by the issue of specifications in our own series.

"Commercial arrangements as well as the established routine of engineering and drafting references make it necessary that we issue specifications in a system in which each specification will have a permanent number for continuing reference and a second or designating number to identify the particular issue. For example, steel castings are covered by specifications, serial number M-506-5. Reference on drawings and in engineering advice to 'Spec. M-506' is a complete identification of the material, but in quotations, orders, etc., the specifications must be identified as Spec. M-506-5. The serial number is a permanent assignment changed only when the material requirements are so changed that in effect a new or different class of material is called for, thereby necessitating a new serial number and a new set of specifications. The dash number is changed with each revised edition.

"In writing our specifications, A.S.T.M. standards may be used in either of two ways. Following introductory matter, needed to put the material properly into the company's system, the A.S.T.M. specifications may be quoted *in toto* or with the omission of sections which may not be applicable. The quoted specifications may then be followed by sections covering matters peculiar to the contract arrangements preferred by the company. The second method is used when the orderly arrangement of our specifications necessitates the introduction of so much matter that the A.S.T.M. standard may be used only as the basis of our specifications. In such cases quotations from the A.S.T.M. standard are written into the sections as freely as possible and the final company standard differs from that of the Society mainly by additions rather than in technical detail. In either case, formal statement is made of the use of the A.S.T.M. specifications by reference to title and designation, thereby giving due credit to the Society and at the same time establishing our specifications as the same as or at least as based upon those of the Society."

On former occasions we have pointed out the importance of making the greatest possible use of A.S.T.M. standards. At the present time, when so much is being said and written concerning the need for eliminating waste and for simplifying and standardizing our industries, it behooves us to study in what way the means already at hand may be used to greatest advantage. Great economies may often be effected through the use of the Society's standards and, incidentally, the work of the Society is strengthened to that degree.

Adoption of Standards and Amendments to By-Laws

The letter ballot on the adoption of (*a*) amendments to By-laws; (*b*) revision of 57 existing standards; and (*c*) 95 tentative standards recommended for adoption as standard, ordered at the annual meeting, was canvassed on September 1, 1927. There were 466 legal ballots cast, and all items were adopted. The official count of the ballots is given below. The difference between the number of ballots and the sum of the affirmative and negative votes for any item represents the number of ballots marked "not voting" on that item:

Item	Affirmative	Negative
AMENDMENTS TO BY-LAWS		
Article VII. Dues:		
1. Revision of Section 1	293	8
2. Revision of Section 3	285	9
REVISIONS OF EXISTING STANDARDS		
Standard Specifications for:		
3. Boiler and Firebox Steel for Stationary Service (A 70 – 24)	100	..
4. Carbon-Steel Bars for Railway Springs (A 14 – 16)	102	..
5. Carbon-Steel Bars for Railway Springs with Special Silicon Requirements (A 68 – 18)	101	..
6. Carbon-Steel Bars for Vehicle Springs (A 58 – 16)	91	..
7. Silico-Manganese-Steel Bars for Railway Springs (A 59 – 16)	94	..
8. Chrome-Vanadium-Steel Bars for Railway Springs (A 60 – 16)	94	..
9. Carbon-Steel and Alloy-Steel Forgings (A 18 – 21)	117	..
10. Quenched-and-Tempered Carbon-Steel Axles (A 19 – 21)	102	1
11. Quenched-and-Tempered Alloy-Steel Axles (A 63 – 21)	102	1
12. Carbon-Steel Forgings for Locomotives (A 20 – 21)	102	..
13. Steel and Iron Boiler Tubes (A 83 – 24)	102	1
14. Welded and Seamless Steel Pipes (A 53 – 24)	99	1
15. Alloy-Steel Bolting Material (A 96 – 26)	104	..
16. Welded Wrought-Iron Pipe (A 72 – 24)	95	3
17. Staybolt and Extra-Refined Wrought-Iron Bars (A 84 – 24)	94	..
18. Merchant Bar Iron (A 85 – 24)	95	1
19. Malleable Castings (A 47 – 24)	84	2
20. Lake Copper Wire Bars, Cakes, etc. (B 4 – 13)	72	2
21. Electrolytic Copper Wire Bars, Cakes, etc. (B 5 – 13)	63	..
22. Hard-Drawn Copper Wire (B 1 – 23)	64	..
23. Medium Hard-Drawn Copper Wire (B 2 – 15)	60	..
24. Soft or Annealed Copper Wire (B 3 – 15)	64	..
25. Bare Concentric-Lay Copper Cable (B 8 – 21)	48	..
26. Round and Grooved Copper Trolley Wire (B 47 – 25)	41	..
27. Naval Brass Rods for Structural Purposes (B 21 – 19)	47	2
28. High Sheet Brass (B 36 – 21)	56	..
29. Gypsum Plasters (C 28 – 21)	53	..
30. Gypsum Partition Tile or Block (C 52 – 25)	54	..
31. Hollow Burned-Clay Load-Bearing Wall Tile (C 34 – 26)	52	..
32. Ocher (D 85 – 24)	41	..
33. Woven Cotton Fabrics for Use in Waterproofing (D 173 – 25)	50	..
34. Tolerances for Square-Woven Tire Fabrics (D 122 – 25)	33	3
35. Tolerances for Cord Tire Fabrics (D 179 – 25)	34	..
36. Osnaburg Cement Sacks (D 205 – 25)	42	1
Standard Methods of:		
37. Sampling and Chemical Analysis of Cast Iron (A 64 – 16)	123	..
38. Chemical Analysis of Brass Ingots and Castings (B 45 – 23)	87	1
39. Chemical Analysis of Bronze Bearing Metal (B 46 – 23)	92	..
40. Test for Unit Weight of Aggregate for Concrete (C 29 – 21)	100	1
41. Test for Organic Impurities in Sands for Concrete (C 40 – 22)	109	..
42. Making Specimens of Concrete in the Field (C 31 – 21)	104	..
43. Making Compression Tests of Concrete (C 39 – 25)	107	..
44. Testing Gypsum and Gypsum Products (C 26 – 23)	69	..
45. Test for Specific Gravity of Pigments (D 153 – 24)	65	..
46. Analysis of White Pigments (D 34 – 17)	73	..
47. Analysis of Dry Red Lead (D 49 – 18)	72	..
48. Analysis of Yellow, Red and Brown Pigments (D 50 – 18)	71	..
49. Analysis of Yellow, Orange, Blue Pigments and Chrome Green (D 126 – 23)	70	..
50. Analysis of Titanium Pigments (D 186 – 25)	72	..
51. Test for Water in Petroleum Products (D 95 – 24)	125	1
52. Mechanical Analysis of Fine Highway Material (D 7 – 18)	103	..
53. Test for Loss on Heating of Oil (D 6 – 20)	108	..
54. Laboratory Sampling and Analysis of Coal (D 22 – 24)	123	1
55. Laboratory Sampling and Analysis of Coke (D 37 – 24)	117	1
56. Testing Molded Insulating Materials (D 48 – 24)	54	..
57. Testing Cotton Fabrics (D 39 – 24)	57	..
58. Metallographic Testing of Non-Ferrous Metals (E 5 – 24)	76	1
Standard Definitions of:		
59. Terms Relating to Wrought-Iron Specifications (A 81 – 21)	104	..
TENTATIVE STANDARDS TO BE ADOPTED AS STANDARD		
Tentative Specifications for:		
60. Open-Hearth Carbon-Steel Rails (A 1 – 26 T), as revised	99	..
61. Open-Hearth Steel Girder Rails (A 2 – 26 T)	94	..
62. Low-Carbon Steel Track Bolts (A 76 – 20 T), as revised	91	..
63. Structural Silicon Steel (A 94 – 25 T)	99	..
64. Steel Plates of Structural Quality for Forge Welding (A 78 – 23 T), as revised	101	2
65. Steel Plates of Flange Quality for Forge Welding (A 89 – 23 T), as revised	101	2
66. Steel Wire for Concrete Reinforcement (A 82 – 21 T), as revised	108	..
67. Carbon-Steel Car and Tender Axles (A 21 – 25 T), as revised	104	..
68. Carbon-Steel Castings for Railroads (A 87 – 22 T), as revised	101	..
69. Commercial Hot-Rolled Bar Steels (A 107 – 26 T), as revised	113	..
70. Commercial Cold-Finished Bar Steels and Cold-Finished Shafting (A 108 – 26 T), as revised	104	..
71. Hot-Dipped Galvanized Sheets (A 93 – 24 T), as revised	109	2
72. Hollow Staybolt Iron (A 86 – 25 T), as revised	80	1
73. Tungsten Powder (A 97 – 25 T)	51	..
74. Spiegeleisen (A 98 – 25 T)	61	..
75. Ferro-Manganese (A 99 – 25 T)	72	..
76. Ferro-Silicon (A 100 – 25 T)	72	..
77. Ferro-Chromium (A 101 – 25 T)	69	..
78. Ferro-Vanadium (A 102 – 25 T)	68	..
79. Phosphor Tin (B 51 – 24 T)	63	..
80. Phosphor Copper (B 52 – 24 T)	60	..
81. Silicon Copper (B 53 – 24 T)	46	..
82. Soft Rectangular Copper Wire (B 48 – 26 T)	47	..
83. Manganese-Bronze Ingots for Sand Castings (B 7 – 24 T)	50	1
84. Manganese-Bronze Sand Castings (B 54 – 24 T)	50	1
85. Muntz Metal Condenser Tube Plates (B 57 – 25 T)	40	..
86. Quicklime for Use in Manufacture of Sulfite Pulp (C 46 – 25 T	36	..
87. Hydrated Lime for the Manufacture of Varnish (C 47 – 22 T)	41	..
88. Quicklime for Use in Water Treatment (C 53 – 25 T)	58	..
89. Hydrated Lime for Use in Water Treatment (C 54 – 25 T)	56	..
90. Hollow Burned-Clay Floor Tile (C 57 – 26 T), as revised	56	..
91. Raw Linseed Oil (D 234 – 26 T), as revised	80	2
92. Destructively Distilled Turpentine (D 236 – 26 T), as revised	70	1
93. Orange Shellac (D 237 – 26 T)	59	..
94. Iron Oxide and Iron Hydroxide (D 84 – 25 T), as revised	64	1
95. Chrome Yellow (D 211 – 26 T), as revised	59	1
96. Pure Chrome Green (D 212 – 26 T), as revised	56	1
97. Reduced Chrome Green (D 213 – 26 T), as revised	55	2
98. Broken Slag for Bituminous Macadam Base (D 195 – 24 T)	71	3
99. Broken Slag for Bituminous Concrete Base (D 196 – 24 T)	67	4
100. Broken Slag for Bituminous Wearing Course (D 159 – 24 T)	66	4
101. Broken Slag for Bituminous Concrete (Coarse-Graded Type) (D 160 – 24 T)	67	5
102. Broken Slag for Bituminous Concrete (Fine-Graded Type) (D 161 – 24 T)	67	3
103. Joist, Planks, Beams and Posts (D 245 – 26 T), as revised	45	..
104. High-Carbon Coal-Tar Pitch for Use in Built-Up Roofs (D 251 – 26 T)	54	1
105. High-Bitumen Coal-Tar Pitch for Use in Built-Up Roofs (D 252 – 26 T)	50	2
106. Asphalt Roll-Roofing Surfaced with Talc (D 224 – 26 T)	54	..
107. Slate-Surfaced Asphalt Roll-Roofing and Shingles (D 225 – 26 T)	53	1
108. Asphalt Roll-Roofing Surfaced with Granular Talc (D 248 – 26 T)	44	..
109. Heavy Weight Slate-Surfaced Asphalt Roll-Roofing and Shingles (D 249 – 26 T)	53	1
110. Asphalt-Saturated Roofing Felt for Use in Waterproofing (D 226 – 26 T)	53	..
111. Coal-Tar Saturated Roofing Felt for Use in Waterproofing (D 227 – 26 T)	52	..
112. Asphalt-Saturated Asbestos Felt for Use in Built-Up Roofs (D 250 – 26 T), as revised	51	..
113. Textile Testing Machines (D 76 – 25 T)	59	..
114. Tolerances for Cotton Yarns, Single and Plied (D 180 – 25 T)	45	..
115. Tolerances for Cotton Sewing Threads (D 204 – 25 T)	38	..
116. Tolerances for Numbered Cotton Duck (D 230 – 25 T)	42	1
117. Tolerances for Electrical Silk and Cotton Tapes (D 259 – 26 T)	41	1
Tentative Methods of:		
118. Test for Magnetic Properties of Iron and Steel (A 34 – 26 T), as revised	82	..
119. Sampling Ferro-Alloys (A 103 – 25 T)	80	..
120. Chemical Analysis of Ferro-Alloys (A 104 – 25 T)	79	..
121. Sampling, Inspection, Packing and Marking of Quicklime and Lime Products (C 50 – 24 T)	57	1
122. Securing Specimens of Hardened Concrete (C 42 – 25 T)	83	..
123. Test for Specific Gravity of Pigments (D 238 – 26 T), as revised	61	1
124. Analysis of Grease (D 128 – 26 T), as revised	90	..
125. Test for Distillation of Gasoline (D 86 – 26 T)	133	1
126. Test for Distillation of Natural Gas Gasoline (D 216 – 25 T)	114	3
127. Test for Steam Emulsion of Lubricating Oils (D 157 – 23 T), as revised	108	2
128. Test for Sulfur in Petroleum Oils (D 129 – 22 T)	112	..
129. Test for Burning Quality of Kerosine Oils (D 187 – 24 T)	101	2
130. Test for Burning Quality of Long-Time Burning Oil (D 219 – 26 T)	90	1
131. Test for Burning Quality of Mineral Colza Oil (D 239 – 26 T), as revised	89	1
132. Test for Thermal Value of Fuel Oil (D 240 – 26 T), as revised	112	..
133. Test for the Determination of Bitumen (D 4 – 26 T)	104	..
134. Test for Bitumen Soluble in Carbon Tetrachloride (D 165 – 26 T)	102	..
135. Float Test for Bituminous Materials (D 139 – 25 T)	102	..
136. Test for Specific Gravity of Road Oils (D 70 – 26 T)	105	..
137. Test for Specific Gravity of Asphalts (D 71 – 26 T)	107	..
138. Testing Small Clear Specimens of Timber (D 143 – 24 T)	50	..
139. Conducting Static Tests of Timber (D 198 – 24 T)	41	..
140. Test for Coke Residue of Creosote Oil (D 168 – 23 T)	56	..
141. Chemical Analysis of Zinc Choloride (D 199 – 24 T)	49	..
142. Testing Bituminous Mastics (D 147 – 25 T)	60	..
143. Felted and Woven Fabrics for Use in Waterproofing and Roofing (D 146 – 26 T)	48	1

(Continued on page 7)

AMERICAN SOCIETY FOR TESTING MATERIALS

BULLETIN

Issued Bi-Monthly

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Number 28 September 30, 1927

New Work Under Consideration

THE SOCIETY is being recognized to an ever increasing extent as an authority on questions relating to materials. The more widely its work becomes known the more frequently is it turned to for assistance and the greater become its responsibilities. This is well illustrated by the fact that at the quarterly meeting of the Executive Committee on October 11 there will be considered five proposals for work to be undertaken by the Society either in new fields or as an extension of present activities. In the former category are:

1. The development of standard methods of sampling water in lakes and streams, a proposal which is being studied in conjunction with the work of the Joint Research Committee on Boiler Feed Water in which the Society is already participating.

2. The development of standard methods for determination of heat loss through building materials and construction. This proposal has already received some consideration by Committee E-1 on Methods of Testing and due consideration is being given to work already undertaken in this field by other agencies, prominent among them being the American Society of Heating and Ventilating Engineers.

3. Committee B-2 on Non-Ferrous Metals and Alloys has recommended an investigation of the lack of definiteness in description of non-ferrous metals and alloys used in trade publications in quoting market prices, in the belief that industry would be greatly benefited and the usefulness of the work of the Society promoted. The trade papers are showing considerable interest in the possibilities of such an investigation.

The two projects that in a sense are expansions of present activities are:

1. The development of standard methods of fire tests for combustible materials, proposed in the paper by M. E. Dunlap and F. P. Cartwright presented at the recent annual meeting. There is a general consensus of opinion that this work if undertaken might logically be referred to Committee C-5 on Fire Tests of Materials and Construction.

Amendments of By-Laws Adopted

Annual Dues of Company Members Increased to Thirty Dollars

The letter ballot on the amendments of Article VII, Section 1, and Article VII, Section 3 of the By-laws on which action was taken at the annual meeting resulted in the adoption of these amendments. The vote is recorded on page 3. As amended, the sections now read as follows, the new wording being printed for convenience in italics followed in brackets by the provisions that have been superseded:

"SECTION 1. The fiscal year shall commence on the first day of January. *The annual dues, payable in advance, shall be as follows: For Members that are companies, firms, corporations, industrial associations or commercial testing laboratories, $30; for all other Members, $15; for Junior Members, $7.50; for Student Members, $3.* [The annual dues shall be $15 for Members, $7.50 for Junior Members and $3 for Student Members, payable in advance.] Honorary Members shall not be subject to dues."

"SECTION 3. (First sentence not amended.) The cost of membership in perpetuity to *companies, firms, corporations, industrial associations and commercial testing laboratories shall be $600; to other organizations, $300.* [corporations, firms, technical or scientific societies, teaching faculties or libraries shall be $300.]"

It is gratifying that the action of the Society at the annual meeting has been thus confirmed by a formal vote, in endorsement of the plan for providing the Society with greater financial income so that its activities may continue to grow with the increasing demands that are being made upon it and at the same time its publication and other work carried on more effectively.

It has already been pointed out that while the increased financial support under the plan adopted will come directly from industry, which benefits in increasing degree from the work of the Society, the whole proposal is upon a voluntary basis in that companies which may not wish to give this increased support to the Society's work can still continue their affiliation by transferring their membership to an individual in the company. At the same time it is believed that a number of companies not holding membership in the Society but in touch with our activities through the personal membership of one or more individuals in their employ, will desire to lend increased support to the Society by taking out company membership.

Members of the Society affected by this amendment of the By-laws will within the next few weeks receive a communication thereon from the Secretary-Treasurer.

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2. Development of specifications for lime plastering. A request by Committee C-7 to undertake the preparation of such specifications was considered by the Executive Committee. This committee felt that the Society on its sole responsibility should not prepare specifications for lime plastering, which include features of design, construction and workmanship that are outside of the immediate field of Society activities, but that the Society might well join with other appropriate organizations in preparing such specifications, as was the case in developing the specifications for concrete and reinforced concrete. The possibility of including other types of plastering such as cement and gypsum and possibly exterior plastering (stucco) has been suggested.

Correspondence with various committee officers and other members has developed a considerable interest in each of these projects and comments and suggestions from all members will be most welcome.

COMMITTEE ACTIVITIES

Space in the BULLETIN *is reserved for items of interest about committee activities. Officers of committees are invited to prepare information of suitable character for publication.*

Committee Notes

Committee A-2 on Wrought Iron during the past few years has turned its attention to the possibilities of research in reference to wrought iron. The committee is now giving consideration to the question of what constitutes quality in wrought iron and the best means for determining quality. This question would include such phases as defining what is meant by wrought iron by means of specifications, the interpretation of physical tests, the meaning of the mechanical analysis and the interpretation of the macrostructure and microstructure of the material.

Committee C-1 on Cement will hold its fall meeting at Allentown, Pa., at Hotel Allen on October 24–25. The first day will be given over to a visit to laboratories and cement plants in the Lehigh district—including a visit to the plant of the Atlas Lumnite Cement Co. and the laboratory of the Lehigh Cement Co. In the evening the members will be the guests of Mr. Brown, the President of the Portland Cement Association, at dinner at the Northampton Country Club.

The second day will be given over to reports of the various sub-committees covering the work dealing with the testing of 32 brands of cement by 47 laboratories. The reports will cover studies of the relation between chemical composition and strength of the neat cement, mortar and concrete; fineness; time of set; consistency; volume constancy, etc.

Committee D-2 on Petroleum Products and Lubricants is cooperating unofficially with a committee of the American Society of Mechanical Engineers in the preparation of a test code for electric fuels. Further details concerning this test code will be given at a later date.

Sub-Sieve Sizes.—A meeting of the Section on Sub-Sieve Sizes, of Technical Committee IV on Size and Shape, of **Committee E-1 on Methods of Testing,** was held on Tuesday, July 5, 1927, in the offices of the New Jersey Zinc Co. in New York City. Six reports were received, giving methods and results of measurements made on standard samples sent out by the section.

Many suggestions were made for the standardization of methods and a small committee was appointed to choose a nomenclature for the work covered by this section.

Further work is being done and reports are to be modified to correspond to the suggestions made prior to publication or any definite report of the section.

Omission in Committee D-1 Personnel

It has been learned that in printing the personnel of Committee D-1 on Preservative Coatings for Structural Materials in the 1927 Year Book, two names were omitted in listing the personnel of sub-committees. The name of J. B. Davis should be included in the list of members of Sub-Committee V on Linseed Oil, and the name of C. H. Bryce should be added to the list of members of Sub-Committee XVIII on Physical Properties of Materials.

Reprints of Marburg Lecture in Great Demand

Appreciation of the importance and value of the second Edgar Marburg Lecture, on "The X-ray Examination of Materials in Industry," delivered at the recent annual meeting by Dr. George L. Clark, is evidenced by the number of requests for copies that have been received. Individual requests are in the neighborhood of 750, and in addition there has been some demand for the Lecture in quantity. Distribution will be made about October 15.

Schedule of Committee Meetings

DATE	COMMITTEE	PLACE
October	C-3 on Brick	Dayton, Ohio.
October 7–8	B-4 on Metallic Materials for Electrical Heating	Washington, D. C.
October 10	E-9 on Correlation of Research	Philadelphia
October 11	Executive Committee	Philadelphia
October 20–21	Sub-Committees of Committee A-1 on Steel	Philadelphia
October 20–21	D-13 on Textile Materials	Atlanta, Ga.
October 24–25	C-1 on Cement	Allentown, Pa.
October 27–28	D-9 on Electrical Insulating Materials	Rochester, N. Y.

Sulfur and Phosphorus Investigation Progressing

During the week of July 25 there was manufactured for the Joint Committee on Investigation of the Effect of Phosphorus and Sulfur in Steel, under the supervision of its Committee on Manufacture, a group of basic open-hearth forging steels, which in due course will be tested in the form of 1-in. rolled rounds, 2-in. hammered rounds and 8-in. pressed rounds, to determine the effect of residual sulfur which in the eight heats ranges from approximately 0.03 to 0.10 per cent. This is the second lot of material in this group that has been obtained, the Joint Committee having reported at the recent annual meeting of the Society that results of the tests of some of the larger size material first secured made it advisable to repeat this series before reporting results, particularly in view of the great economic importance of this type of material. The 1-in. and 2-in. rounds were manufactured at the Jones and Laughlin plant while the 8-in. rounds will be forged by the Carnegie Steel Co. The material is to be tested in annealed and quenched-and-drawn conditions, the tests, as heretofore, being made in duplicate at Watertown Arsenal and the Naval Experiment Station. Heat treatment of all material will be under the supervision of the Bureau of Standards.

The first material to be tested for effect of phosphorus was manufactured for the Joint Committee under its supervision by the Atlantic Steel Castings Co., at Chester, Pa., during the week of September 12. Approximately 300 bars $1\frac{1}{8}$ in. square by 12 in. long were cast from acid open-hearth steel of two carbon contents approximately 0.25 and 0.45 per cent. Of the lower carbon steel five heats were secured with desired residual phosphorus contents of 0.025, 0.04, 0.06, 0.07 and 0.10 per cent; of the higher carbon steel three heats with desired residual phosphorus 0.025, 0.05 and 0.07 per cent were obtained. Tension, impact, compression, fatigue and torsion tests are to be made in duplicate on the material in three conditions, annealed, normalized and normalized and drawn.

The Joint Committee has further under consideration a program of tests to determine the effect of phosphorus on re-phosphorized low-carbon steel, such as is used in the production of welded tubes and pipe. The phosphorus contents of 0.05, 0.075 and 0.10 per cent in each case re-phosphorized from 0.025 per cent have been suggested. The effect of phosphorus upon the endurance limit of such material under alternate stress is considered to be of much importance.

Reports on High Temperature Tests of Metals

At the recent annual meeting, the Joint Research Committee on Effect of Temperature on the Properties of Metals presented a general report of progress accompanied by two reports giving the results of certain experiments made under the direction of the committee. The first was by H. J. French entitled "Report on Comparative High Temperature Tension Test on a Carbon Steel and a Chromium-Molybdenum Steel at Different Laboratories." These are two of five metals procured by the committee and tested by some twenty cooperating laboratories under specifications carefully drawn up by the Joint Committee.

The second is a report on determination of the thermal expansion of these five metals by N. L. Mochel, including in addition to the two above mentioned, stainless steel, chromium-nickel alloy and commercially pure nickel.

These reports will be printed and distributed in November to those who requested preprint copies of the Joint Committee report. Other requests will be filled as long as the supply lasts.

Progress on Trolley Wire Specifications

The Joint Committee of the Society and the American Electric Railway Association on Trolley Wire Specifications has accomplished an important piece of work in bringing about entire agreement between the two societies in specifications for copper and bronze trolley wire. For copper trolley wire the two societies now have identical standard specifications which it is confidently expected will become standards of the country for that product. Recommendations of the joint committee covering modifications in requirements for tensile strength and number of twists for bronze trolley wire were approved at the recent annual meeting on the recommendation of Committee B-1 and are to be acted upon by the A.E.R.A. at the first opportunity. These specifications are still in the tentative stage and adoption as standard will follow in due course when entire agreement has been reached between the two cooperating societies.

Methods of Testing Wood Recommended for Approval as American Standard

The Methods of Testing Small Clear Specimens of Timber (D 143 – 27) and for Conducting Static Tests of Timber in Structural Sizes (D 198 – 27) recently adopted as standard by the Society on the recommendation of Committee D-7 on Timber, have been offered to the American Engineering Standards Committee for approval as American Standard. This action has been taken jointly by the Society and the U. S. Forest Service, who are sponsors for this project under A.E.S.C. procedure and who have acted upon the unanimous recommendation of the sectional committee formed in 1922 upon which all organizations in the country interested in the testing of wood were represented.

These methods are based upon many years' experience in the testing of wood at the Forest Products Laboratory and elsewhere and were originally drafted by the Sub-Committee on Methods of Test of Committee D-7. While standing as tentative in the Society they have been critically reviewed by the sectional committee and criticisms were invited from testing laboratories throughout the world, which led to a few minor modifications in the original draft. Approval as American Standard will thus bring to a culmination efforts of many years to standardize the methods of testing timber.

Soil Corrosion Investigation

Committees A-5 on Corrosion of Iron and Steel and B-3 on Corrosion of Non-Ferrous Metals have kept in touch with the investigation being carried out by the U. S. Bureau of Standards on soil corrosion. Representatives of these committees have been present as samples in this investigation were removed from the ground.

The metals tested include lead cable sheathing; lead-coated steel pipes, brass fittings attached to lead nipples, to brass nipples and to galvanized nipples; brass and galvanized pipe caps; pure open-hearth iron; cartridge brass; commercial aluminum; aluminum alloys; copper sheet; copper-tin bronze; chemical and desilverized lead; copper-bearing steel; zinc; wrought iron; sherardized and lead-coated bolts; calorized iron; metal sprayed coatings; and various copper-zinc alloys.

The samples are tested by burying them in between forty and fifty different kinds of soils located all over the country. Periodically samples are removed, examined and weighed to determine loss in weight. It is still too early to draw conclusions from the tests.

Joint Research Committee on Boiler Feed Water

The Joint Research Committee on Boiler Feed Water, on which the Society is represented by Max Hecht and F. N. Speller, has made considerable progress in the study of the problem before it. A number of papers have been presented before the committee, including the following:

"The Treatment of Water for Locomotives from the Standpoint of the Chemical Engineer"—William Barr and R. W Savidge.

"Boiler Feed Water Treatment from a Manufacturer's Viewpoint"—J. B. Romer.

"Suggestions for a Five-Year Program of Research on the Boiler Water Problems of Foaming and Priming Electrolytic Scale Prevention, Internal Treatment and the Behavior of Zeolite Softened Waters"—C. W. Foulk.

"Zeolite Water Treatment in a Large Central Heating Plant"—A. H. White, J. H. Walker, E. P. Partridge and L. F. Collins.

A limited number of these papers are available and copies may be secured by those interested upon application to the chairman of the committee, Mr. S. T. Powell, Consulting Chemist, 4103 Hawthorne Ave., Baltimore, Md.

Petroleum Test Methods to be Offered as American Standard

Committee D-2 on Petroleum Products and Lubricants, functioning as the Sectional Committee on Tests of Petroleum Products under A.E.S.C. procedure, is balloting upon the submission to the American Engineering Standards Committee of sixteen A.S.T.M. methods of test for approval as American Standard and three A.S.T.M. tentative methods for approval as Tentative American Standard. The sixteen methods recommended for adoption as American Standard represent all of the A.S.T.M. standard methods for petroleum products that have been developed by Committee D-2, while the three tentative methods have been chosen from among the fourteen tentative methods developed by the committee. When the ballot is completed the report of the sectional committee will be reviewed by the Executive Committee of the Society for submission to the A.E.S.C. on behalf of the Society as sponsor for this project.

Joint Committee on Pattern Equipment Standardization

In an earlier edition of the BULLETIN announcement was made of the standardization of pattern and core box color markings prepared by the Joint Committee on Pattern Equipment Standardization on which the Society is represented by Richard Moldenke and H. W. Gilbert. Since then the committee has prepared a number of recommended practices covering the marking of gage surfaces and locating points on patterns; markings indicating chilled surfaces and metal inserts on patterns; color ingredients of coating materials for marking patterns; pattern letters; loose pieces for pattern and core boxes; leather fillets; core prints for metal patterns; lug design for match plate; position of vibrator bolt holes in match plates; and patternplate thickness.

The committee will welcome further suggestions for recommended practices from anyone interested in this line of endeavor.

Sectional Committee on Testing Road Materials Organized

The Society is sponsor under A.E.S.C. procedure for the development of standard methods of test of road and paving materials. It has formed a sectional committee on this subject by adding to the personnel of Committee D-4 on Road and Paving Materials officially appointed representatives of a number of organizations, some of which have been informally represented for some time and others of which have not been heretofore represented officially. The associations that are now formally represented on the committee are: American Association of State Highway Officials, American Concrete Institute, American Electric Railway Association, American Petroleum Institute, American Road Builders Association, American Society of Civil Engineers, American Society for Municipal Improvements, Asphalt Association, Associated General Contractors of America, Eastern Stone Association, Granite Paving Block Manufacturers Association, National Association of Sand and Gravel Producers, National Crushed Stone Association, National Paving Brick Manufacturers Association, National Slag Association, Portland Cement Association, U. S. Bureau of Public Roads and U. S. Bureau of Standards. The committee contains 80 members classified into producers, consumers and general interests.

The personnel has been submitted for approval of the American Engineering Standards Committee. When such approval has been given the committee will take up consideration of submission of existing methods for approval by the A.E.S.C. as American Standard, including revisions that have been made since original approval by the A.E.S.C. as Tentative American Standard of the Standard Methods of Test for Penetration of Bituminous Materials (D 5 – 25) and the Tentative Method of Test for Distillation of Bituminous Materials Suitable for Road Treatment (D 20 – 27 T).

Appointments to Committee on Papers

The terms of office on Committee E-6 on Papers and Publications of H. C. Berry, G. H. Clamer and W. F. Edwards having expired at the annual meeting, the Executive Committee has appointed the following members to serve on that committee for the ensuing term of three years: Herbert Abraham, A. N. Johnson and Jerome Strauss. These members have long been active in Society affairs and will bring much valuable experience into the activities of this important committee.

Heat Treatment Definitions

Mention has been made in previous issues of the BULLETIN of the work of the Joint Committee on Definitions of Terms Relating to Heat Treatment. This committee consists of three representatives from each of three societies, the American Society of Automotive Engineers, the American Society for Steel Treating and the A.S.T.M. The definitions prepared by that committee were accepted at the recent annual meeting of the Society for publication as tentative on the recommendation of our Committee A-4 on Heat Treatment of Iron and Steel.

These definitions have been very well received, although it is felt by some that they are not applicable in their present form to all uses intended. In order to make them universally applicable, consideration is being given to the inclusion of several additional terms.

Collective Index to Proceedings, Volumes 21-25

The Index to the Society's Proceedings (225 pp.), covering Volumes 21 to 25 (1921 to 1925) announced in our Circular to Members, No. 192, is now on press and copies should be ready for distribution about October 20. This index is being furnished to members at net cost to the Society, the price having been fixed as follows:

	CLOTH	HALF-LEATHER
To members	$1.75	$2.75
To non-members	2.50	3.50

Those desiring copies of the index who have not sent in their orders should do so immediately in order to have shipment made as soon as the copies become available.

Work on the 1927 Book of Tentative Standards and on the 1927 Book of Standards, Parts I and II, is progressing nicely. Copies of these publications should be available by October 20 in the case of the Tentative Standards and early in November in the case of the Standards.

Addresses Wanted

Persons who know the present addresses of the members whose names and last-known addresses are given below, are asked to advise the Secretary-Treasurer:

BRADT, A. L., Analytical and Consulting Chemist, 5854 Cabanne Ave., St. Louis, Mo.

DAY, ROLAND B., Consulting Engineer, 25 Broadway, New York City.

OSBORNE, O. E., Chemist, 317 Oliver St., Whiting, Ind.

Adoption of Standards and Amendments to By-Laws

(*Continued from page 3*)

Item	Affirmative	Negative
Tentative Methods of:		
144. Testing Asphalt Roll-Roofing Surfaced with Talc, Slate-Surfaced Asphalt Roll-Roofing and Shingles (D 228 – 26 T)	55	1
145. Testing Electrical Insulating Oils (D 117 – 26 T), as revised	71	..
146. Verification of Testing Machines by Means of Calibration Bar (E 4 – 26 T), as revised	84	..
147. Brinell Hardness Testing of Metallic Materials (E 10 – 25 T)	106	1
Tentative Definitions of:		
148. Terms Relating to Coal and Coke (D 121 – 26 T), as revised	108	..
149. The Term Slate (D 247 – 26 T), as revised	59	..
150. Terms Relating to Textile Materials (D 123 – 26 T), as revised	59	1
151. The Term Metallography (E 7 – 26 T)	105	..
152. Terms Relating to Specific Gravity (E 12 – 26 T)	129	..
Tentative Recommended Practices for:		
153. Carburizing and Heat Treatment of Carburized Objects (A 37 – 25 T)	82	..
154. The Care of the Eyes When Using a Microscope (E 2 – 26 T)	108	..

New Members to September 30, 1927

The following 36 members were elected from August 1, 1927, making the total membership 4289.

Akron, Ohio, City of, W. F. Peters.
Allwood Lime Co., Victor Hendries.
Andrews, J. Leslie (Carolina Power & Light Co.).
Belyea, A. K. (Consolidated Gas Co. of New York).
Burrell Engineering and Construction Co., M. E. Crosby.
Casey, I. J., Jr. (Town Engineer, Irvington, N. J.).
Cheney Brothers, Charles Huber.
Chyle, John (A. O. Smith Corp.).
Conzelman, J. H. (Natural Rock Asphalt Corp.).
Detroit Hume Pipe Co., W. D. Kimmel.
Donnellan, J. E. (American Society for Steel Treating).
Ferrell, K. P. (Ash Grove Lime & Portland Cement Co.).
Gilbert and Barker Manufacturing Co., M. W. Heckman.
Hackney, Norman (North Western Railway, Punjab, India).
Hamtramck, Mich., City of, M. B. Vorce.
Hills Co., George B., G. B. Hills.
Hofmann, H. E. (Mellon Institute).
Huntington, W. C. (University of Illinois).
La Bour Co., H. E. La Bour.
Logan-Long Co., Henry Cooke.
Miller, W. J. (St. Louis Southwestern Railway Co.).
Mittelman, L. (Associated Oil Co.).
Newhall, C. A. (Consulting Chemist).
Nikonow, J. P. (Amtorg Trading Corp.).
Pedrosa, L. M. (Director de Obras Municipales, Sao Paulo, Brazil).
Pennsylvania Petroleum Co., I. B. Morgan.
Pinck, G. W. (New York State Dept. of Public Works).
Pittsburgh Brass Manufacturing Co., W. S. Montgomery.
Pruett Schaffer Chemical Co., F. B. Ashley.
Quigley, A. H. (American Brass Co.).
Rich Steel Products Co., G. W. Manierre.
Rodes, R. C. (Captain of Artillery, Spanish Army).
Saunders, W. L. (Shannon & Luchs Construction Co.).
Saybolt and Co., E. W., J. E. Keith.
Sinnatt, F. S. (Fuel Technologist).
Standard Sanitary Manufacturing Co., Erwin Sohn.
Tidal Refining Co., O. S. Ambrose.
United Public Service Co., N. Stahl.

Deceased Members

We announce with regret the death of six members:

HORACE A. BEALE, JR., President, Parkesburg Iron Co., Parkesburg, Pa.

B. H. DAVIS, Consulting Engineer, Whitehall Building, New York City.

CHARLES G. JUNEAU, Master Car Builder, Chicago, Milwaukee and St. Paul Railway Co., Milwaukee, Wis.

JOHN V. R. STEHMAN, Metallurgist, 801 Main St., Birdsboro, Pa.

ELMER A. VAUPEL, Foundryman, United Engineering and Foundry Co., 237 Ella St., Pittsburgh, Pa.

Frank C. Wight, Editor, *Engineering News-Record*, New York City.

Frank C. Wight

1882–1927

It is with keen regret that we record the death, on September 18, of Frank C. Wight, Editor of *Engineering-News Record*. In his death the civil engineering profession has indeed suffered a loss and the field of technical journalism has lost one of its leaders. His interest in the work of this Society has always been deeply appreciated by its executives, who felt that they had in Mr. Wight both a strong advocate of the principles upon which the Society is founded and at the same time a helpful and sincere critic of its activities and its developments. His advice and suggestions regarding the Society's activities, both technical and on questions of policy, were always welcomed and valued. Those who knew him personally have lost a real friend in his passing.

List of Publications

Proceedings, Volume 26 (1926).—The Proceedings for 1926 in two parts: Part I, committee reports with discussions and new and revised tentative standards (1204 pp.); Part II, technical papers with discussions (691 pp.). Prices to non-members: paper $12.00, cloth $13.00, half-leather $16.00. To members for extra copies: $7.00, $8.00 and $11.00, respectively.

Book of A.S.T.M. Standards.—Issued triennially. The 1927 edition (1900 pp.) contains the 340 Standards adopted by the Society. Issued in two Parts—Part I, Metals; Part II, Non-Metals. Prices to non-members: either Part, cloth $7.50; both Parts, $15.00; half-leather $9.00 and $17.00. To members for extra copies: either Part, cloth $5.00; both Parts $9.00; half-leather $6.50 and $12.00.

Book of A.S.T.M. Tentative Standards.—The 1927 edition (800 pp.) contains 175 tentative standards issued by the Society. Prices to non-members: paper $7.00, cloth $8.00. To members: $4.50 and $5.50, respectively.

Separate Standards and Tentative Standards.—Separate copies of all standards and tentative standards are available. The price is 25 cents for a single copy and in lots up to 50. Larger quantities are furnished at lower prices.

Complete Sets of Proceedings from 1902 to 1926, inclusive (with the exception of Vols. I and III). Special prices are made to members for extra copies and for complete sets. Binding in paper, cloth or half-leather.

Index to Proceedings, containing both an author and subject index of committee reports and technical papers and discussions. Index to Vols. I-XII, 1898–1912 (158 pp.). Prices to non-members: $1.50 in cloth, $2.00 in half-leather; to members: $1.00 in cloth, $1.50 in half-leather. Index to Vols. XIII-XX, 1913–1920 (189 pp.). Prices to non-members: $2.50 in cloth, $3.50 in half-leather; to members: $1.75 in cloth, $2.75 in half-leather. Index to Vols. 21–25, 1921–1925 (224 pp.). Prices to non-members: $2.50 in cloth, $3.50 in half-leather; to members: $1.75 in cloth, $2.75 in half-leather.

Special Reprints from Proceedings

Symposium on Effect of Temperature upon the Properties of Metals: Four papers summarizing existing knowledge presented at Cleveland meeting of A.S.T.M. and A.S.M.E., May, 1924, complete with discussion and valuable bibliography (184 pp., paper cover). Price, $1.50.

Symposium on Corrosion-Resistant, Heat-Resistant and Electrical-Resistance Alloys: Thirteen papers on all phases of the subject presented at A.S.T.M. meeting at Atlantic City, June, 1924, containing three large inset tables of data on ninety of these alloys, complete with discussion (265 pp., paper cover). Price, $2.00.

1924 Report of Joint Committee on Standard Specifications for Concrete and Reinforced Concrete, including complete specifications with 14 A.S.T.M. specifications and methods of test appended (152 pp., paper cover). Price to non-members, $1.50. To members, $1.00.

Special Pamphlet on Textile Materials, containing twelve standards and eight tentative standards, as well as data relating thereto and information concerning the work of Committee D-13 on Textile Materials (106 pp.). Price, 75 cents.

1927 Report of Committee D-2 on Petroleum Products and Lubricants, containing twenty-six tentative and fifteen standard methods of test (245 pp.). Price, $1.00.

1927 Report of Committee D-9 on Electrical Insulating Materials, containing two standard and ten tentative methods (132 pp.). Price, 70 cents.

Reports of Committee A-5 on Corrosion of Iron and Steel, for the years 1923, 1924, 1925 and 1926. Separate reprints. Price, 50 cents each. 1927 Report, 75 cents.

A List of Alloys (30 pp.) prepared in 1922 by William Campbell for Committee B-2 on Non-Ferrous Metals and Alloys, giving the compositions of some 1550 alloys, most of which are non-ferrous. Price, $1.00.

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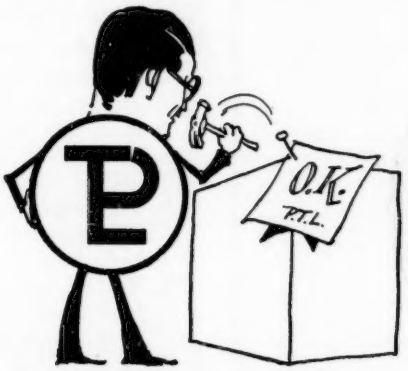

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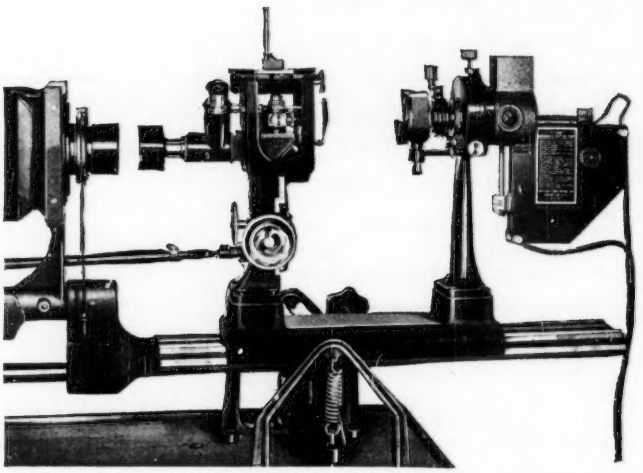

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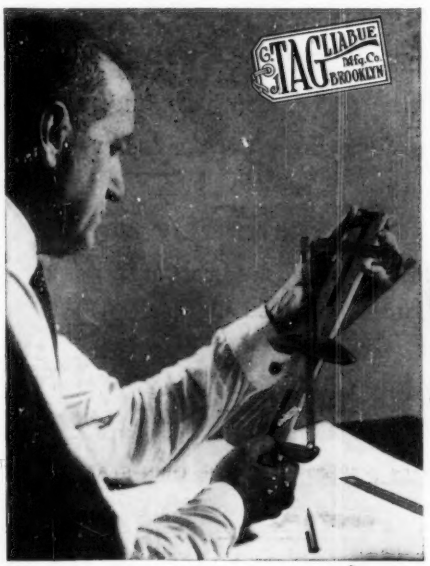

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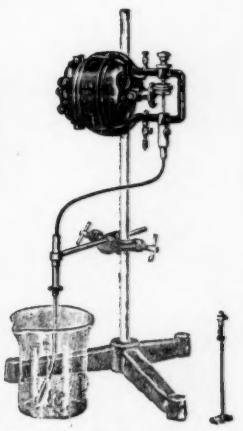

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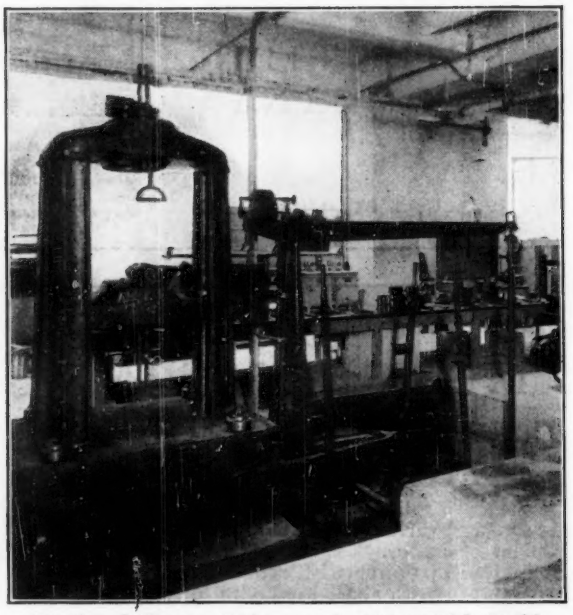

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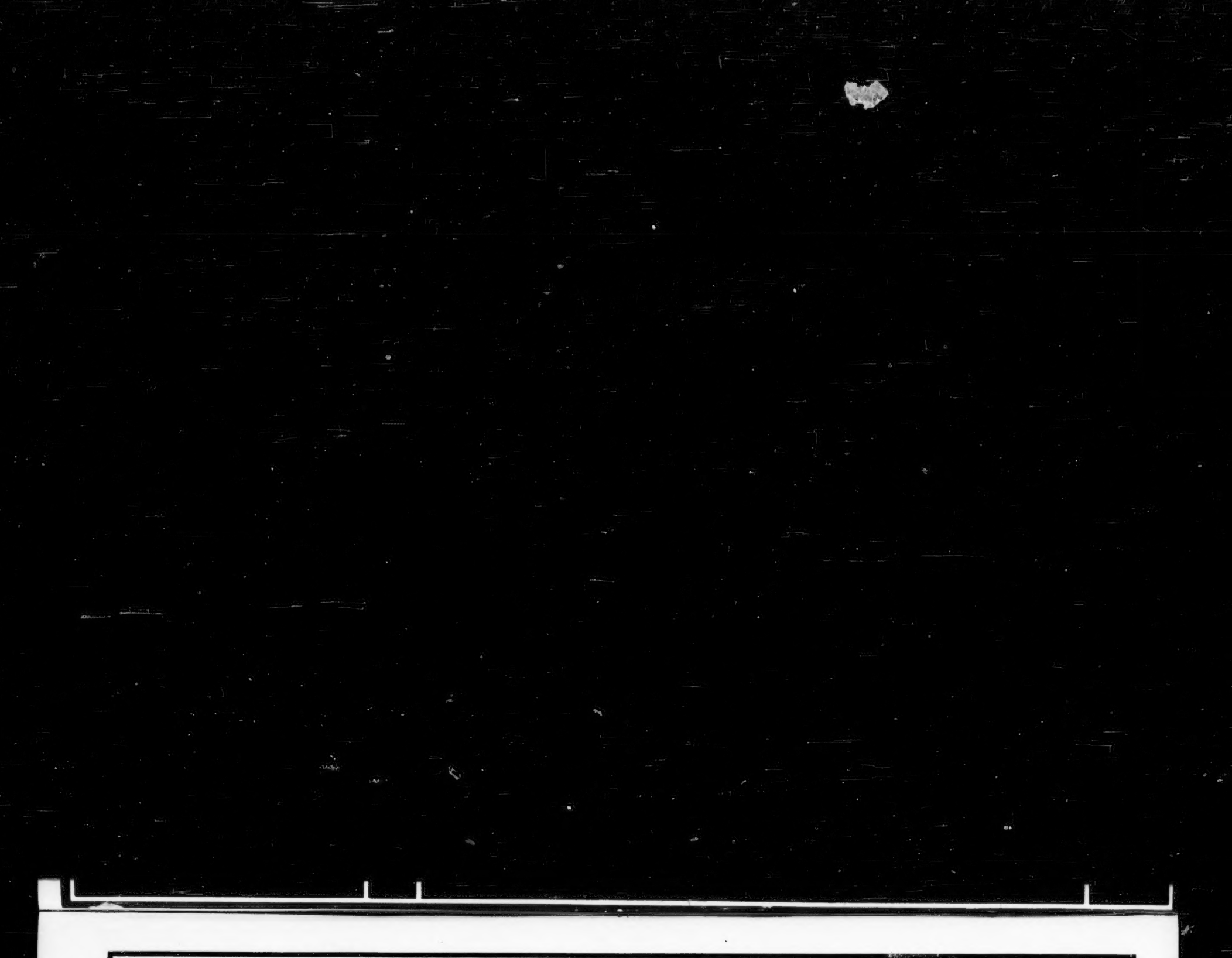
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